

INDIANA DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS DIVISION

QUALIFICATION OF A SURGE BIN FOR EXTENDED STORAGE
ITM No. 578-01T

1.0 SCOPE.

- 1.1** This test method covers the procedure to evaluate the extended storage of HMA with a plant surge bin.
- 1.2** The values stated in either acceptable English or SI metric units are to be regarded separately as standard, as appropriate for a specification with which this ITM is used. Within the text, Si metric units are shown in parenthesis. The values stated in each system shall be used independently of the other, without combining values in any way.
- 1.3** This ITM may involve hazardous materials, operations, and equipment. This ITM does not purport to address all of the safety problems associated with its use. It is the responsibility of whoever uses this ITM to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2.0 REFERENCES.

2.1 AASHTO Standards.

- T 164 Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
- T 170 Recovery of Asphalt from Solution by Abson Method

2.2 ASTM Standards.

- D 4402 Viscosity Determinations of Unfilled Asphalts Using the Brookfield Thermoses Apparatus

- 3.0 SIGNIFICANCE AND USE.** This ITM is used to certify surge bins for extended storage of HMA for 24 h, 48 h, or 72 h periods. The certification for storage will be extended to other surge bins with the same configuration from the same manufacturer.

4.0 PROCEDURE.

- 4.1** The HMA producer shall send a written request to have a surge bin tested to the Field Support Engineer, Materials and Tests Division.
- 4.2** During the 72 h test period, the surge bin shall not be used for other purposes. The test procedure will begin on Monday or Tuesday to allow adequate time for sampling of the HMA.

- 4.3** Obtain a sample of the binder prior to mixing and record the temperature.
- 4.4** Have the HMA producer fill the surge bin with approximately 100 t (100 Mg) or more of HMA produced with the binder.
- 4.5** Obtain two samples of approximately 200 g each of the HMA before it is placed in the surge bin. If this is not possible, add 20 t (20 Mg) of HMA to the surge bin and obtain the samples from 20 t (20 Mg) loaded into a truck. Place the samples in a suitable container, chill immediately, and maintain at a temperature below 0 °F (18 °C) until tested.
- 4.6** Have the HMA producer close and seal the surge bin for a period of 24 h. Load 20 t (20 Mg) of HMA into a truck, obtain two samples of the HMA, and store as in 4.5.
- 4.7** Obtain samples after 48 and 72 h of storage in the same manner as samples taken after 24 h of storage.
- 4.8** Determine the viscosity of the binder obtained prior to mixing in accordance with ASTM D 4402.
- 4.9** Recover the binder from one of the samples obtained at mixing, and at 24, 48, and 72 h of storage in accordance with AASHTO T 164 and T 170. Keep the other sample frozen as a back-up until testing results are known. Determine the viscosity of the binder in accordance with ASTM D 4402.

5.0 CERTIFICATION.

- 5.1** The surge bin may be used for extended storage of HMA when binder hardening due to storage does not exceed 50 percent of the original value of viscosity determined on the binder prior to mixing. The amount of hardening due to storage will be determined by comparison tests on samples of the mixture taken after exit from the pugmill but before entry into the surge bin, and by comparison tests on samples taken after exit from the surge bin.
- 5.2** Depending on the test results, the surge bin will be accepted for storage on a 24, 48, or 72 h basis. The Field Support Engineer will maintain a list of surge bins approved for extended storage.